## 1 Table S1. List of all strains used in this study.

rhaB)568 hsdR514derivative of K-12 MG1655Δ9CPBW25113 Δrac ΔCP4-57 ΔCPS-53 ΔDLP12 ΔQin Δe14 ΔCP4-6 ΔCPZ-55ΔCP4- 44 ΔkanRderivative of BW25113 lacking all nine cryptic prophages; constructed by X. Wang, et al. (9)HME71W3110 galK <sub>tyr145UAG</sub> ΔlacU169 [λ cl857 Δ(cro-bioA)] Δ(srlA-recA)301::Tn10our laboratory collection; E. coli K-12 stain carrying the temperature-sensitive λRED prophage;	Strain	Genotype*	Source / Description / Construction
call (1)  used by F. Maisonneuve, et al. (2)   abs known as \$5230 (cripsing From S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   abs known as \$5230 (cripsing From S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   abs known as \$5230 (cripsing From S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$5230 (cripsing From S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$5230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$5230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$5230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$5230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$5230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$5230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$6230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$6230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$6230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$6230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$6230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$6230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$6230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$6230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$6230 (abs from S. K. Christmenn, et al. (3)  used by E. Maisonneuve, et al. (2)   also known as \$6230 (abs from S. K. Christmenn, et al. (2)  used by E. Maisonneuve, et al. (2)   also known as \$6230 (abs from S. K. Chr	E. coli K-12 MG1655	7 -	-
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Maisonneuve, et al. (2)		yhaV λ <sub>def</sub> (+) φ80(+)	
### #################################	Δ8ΤΑ		
who'v ΔyofNo DamasRA Aucht   w80f+) w80fh(80)imm(N/+)   Maisonneuve, et al. (2)   Also known as EJM43; constructed and used by E. who'v ΔyofNo DamasRA ΔhicAB βωefle Edini-yafQ ΔyefM-yoeB AhigBA Aprif-yahv ΔyofNo DamasRA ΔhicAB βωefle Edini-yafQ ΔyefM-yoeB AhigBA Aprif-yahv ΔyofNo DamasRA ΔhicAB βωefle Edini-yafQ ΔyefM-yoeB AhigBA Aprif-yahv ΔyofNo DamasRA ΔhicAB βωefle Edini-yafQ QyefM-yoeB AbigBA Aprif-yahv:#RT ΔhigB::FRT ΔyofO:::FRT ΔyofO:::			
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whot ΔyafNO ΔmgsRA ΔhicλB Δacl+1 @80(+) φ80(θ) βmm(λ)(+)   Maisonneuve, et al. (2)	Λ10ΤΔ		
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Maisonneuve, et al. (2)  Maisonneuve, et al. (2)  Maisonneuve, et al. (2)  this study, also known as AHK250  Maisonneuve, et al. (2)  this study, also known as AHK250  Maisonneuve, et al. (4)  K-12 MG1655 lamB λ(+)  Maisonneuve, et al. (4)  K-12 MG1655 lamB λ(+)  Maisonneuve, et al. (4)  Maisonneuve, et al. (4)  Maisonneuve, et al. (4)  Maisonneuve, et al. (4)  Maisonneuve, et al. (5)  Maisonneuve, et al. (6)  Maisonneuve, et al. (6)  Maisonneuve, et al. (7)  Maisonneuve, et al. (7)  Maisonneuve, et al. (7)  Maisonneuve, et al. (8)  Maisonneuve, et al. (9)  Maisonneuve, et al. (7)  Maisonneuve, et al. (8)  Maisonneuve, et al. (9)  Maison			
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λ(+) K-12 MG1655 lamB λ(+) also called JMT1; single lambda lysogen of S. Semsey, et al. (4)  φ80(+) K-12 MG1655 φ80(+) this study; also called AHK031; K-12 MG1655 wildtype lysogenized with φ80 from culture supernatant of Δ10TA attB(+) obtained from Sine Lo Svenningsen  lamB K-12 MG1655 lamB::camR obtained from Sine Lo Svenningsen  fhuA K-12 MG1655 fhuA::kanR  fhuA K-12 MG1655 relA::kanR(251) spoT::: cat(207) λ(+) φ80(+) also called CF1693 (originally from H. Xiao, et al. (6)): used by E. Maisonneuve, et al. (7) as stock EJM48; no indication that the lambda prophage is defective this study; also called PDC47  relA spoT (new) K-12 MG1655 relA::FRT spoT::cat(207) this study; also called PDC47  lon K-12 MG1655 sulA::kanR  Δpgk-ppx (old) K-12 MG1655 sulA::FRT Δlon this study; also called AHK173  Δppk-ppx (old) K-12 MG1655 ppk-ppx  MK-12 MG1655 ppk-ppx  (old) K-12 MG1655 ppk-ppx  MK-12 MG1655 ppk-ppx	Λ10'TΛ	V 12 NG1655 AbicAB::EPT AmacB::EPT AvafO:::EPT Avba\/::EPT AbiaB::EPT	
λ(+)  K-12 MG1655 lamB λ(+)  Also called JMT1; single lambda lysogen of S. Semsey, et al. (4)  Line study; also called AHK031; K-12 MG1655 wildtype lysogenized with φ80 from culture supernatant of Δ10TA att8(+)  obtained from Sine Lo Svenningsen  this study; fhuA::kanR allele transduced from the KEIO collection (5)  also called CF1693 (originally from H. Xiao, et al. (6)) used by E. Maisonneuve, et al. (7) as stock EJM48; no indication that the lambda prophage is defective  also called CF1693 (originally from H. Xiao, et al. (8)) used by E. Maisonneuve, et al. (7) as stock EJM48; no indication that the lambda prophage is defective  al. (7)  relA spoT (new)  K-12 MG1655 lon::tetR  Jour laboratory collection; used by E. Maisonneuve, et al. (7)  sulA  K-12 MG1655 sulA::kanR  Constructed and used by E. Maisonneuve, et al. (7)  sulA Δlon  K-12 MG1655 sulA::kanR φ80(+)  Appk-ppx (old)  K-12 MG1655 Δppk ppx::kanR φ80(+)  Appk-ppx (new)  K-12 MG1655 Δppk-ppx  Appk-ppx (new)	Δ10 1A		tilis study, also kilowii as Afik230
this study; also called AHK031; K-12 MG1655 wildtype lysogenized with φ80 from culture supernatant of Δ10TA attB(+)  lamB	λ(+)		also called JMT1; single lambda lysogen of S. Semsey,
Iysogenized with φ80 from culture supernatant of Δ10TA attB(+)	,		
Δ10TA attB(+)	φ80(+)	K-12 MG1655 <i>φ80(+)</i>	The state of the s
IamB K-12 MG1655 IamB::camR obtained from Sine Lo Svenningsen  fhuA K-12 MG1655 fhuA::kanR  K-12 MG1655 fhuA::kanR this study; fhuA::kanR allele transduced from the KEIO collection (5)  relA spoT (original)  K-12 MG1655 relA::kanR(251) spoT::: cat(207) λ(+) φ80(+)  relA spoT (new)  K-12 MG1655 relA::kanR(251) spoT::: cat(207) λ(+) φ80(+)  relA spoT (new)  K-12 MG1655 relA::kanR(251) spoT::cat(207)  lon  K-12 MG1655 lon::tetR  our laboratory collection; used by E. Maisonneuve, et al. (7)  sulA  K-12 MG1655 sulA::kanR  constructed and used by E. Maisonneuve, et al. (7)  sulA Δlon  K-12 MG1655 sulA::FRT Δlon  this study; also called AHK173  Δppk-ppx (old)  K-12 MG1655 Δppk ppx::kanR φ80(+)  (8), used by E. Maisonneuve, et al. (7) as EJM47  this study; also known as AHK062  BW25113  K-12 MG1655 F Δ(araD-araB)567 ΔlacZ4787(::rrnB-3) λ· rph-1 Δ(rhaD-rhaB)568 hsdR514  ΔPOCP  BW25113 Δrac ΔCP4-57 ΔCPS-53 ΔDLP12 ΔQin Δe14 ΔCP4-6 ΔCPZ-55ΔCP4-4 derivative of K-12 MG1655  ΔPOCP  BW25113 Δrac ΔCP4-57 ΔCPS-53 ΔDLP12 ΔQin Δe14 ΔCP4-6 ΔCPZ-55ΔCP4-4 derivative of BW25113 lacking all nine cryptic prophages; constructed by X. Wang, et al. (9)  our laboratory collection; E. coli K-12 stain carrying the temperature-sensitive λRED prophage;			1
fhuA  K-12 MG1655 fhuA::kanR  K-12 MG1655 fhuA::kanR(251) spoT::: cat(207) λ(+) φ80(+)  also called CF1693 (originally from H. Xiao, et al. (6)); used by E. Maisonneuve, et al. (7) as stock EJM48; no indication that the lambda prophage is defective this study; also called PDC47  lon  K-12 MG1655 lon::tetR  our laboratory collection; used by E. Maisonneuve, et al. (7)  sulA  K-12 MG1655 sulA::kanR  constructed and used by E. Maisonneuve, et al. (7)  sulA  K-12 MG1655 sulA::kanR  constructed and used by E. Maisonneuve, et al. (7)  this study; also called AHK173  Δρρk-ρρx (old)  K-12 MG1655 Δρρk ρρx::kanR φ80(+)  also called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (7) as EJM47  this study; also known as AHK062  BW25113  K-12 MG1655 F Δ(araD-araB)567 ΔlacZ4787(::rrnB-3) λ· rph-1 Δ(rhaD-rhaB)568 hsdR514  ΔΘCP  BW25113 Δrac ΔCP4-57 ΔCP5-53 ΔDLP12 ΔQin Δe14 ΔCP4-6 ΔCPZ-55ΔCP4-44 ΔαnR  HME71  W3110 galK <sub>NYLMSUAG</sub> ΔlacU169 [λ cl857 Δ(cro-bioA)] Δ(srlA-recA)301::Tn10  our laboratory collection; ε. coli k-12 stain carrying the temperature-sensitive λRED prophage;	lamR	K-12 MG1655 /amB::camB	
collection (5)  relA spoT (original)  K-12 MG1655 relA::kanR(251) spoT::: cat(207) λ(+) φ80(+)  relA spoT (new)  K-12 MG1655 relA::FRT spoT::cat(207)  K-12 MG1655 relA::FRT spoT::cat(207)  lon  K-12 MG1655 lon::tetR  our laboratory collection; used by E. Maisonneuve, et al. (7)  sulA  K-12 MG1655 sulA::kanR  our laboratory collection; used by E. Maisonneuve, et al. (7)  sulA Δlon  K-12 MG1655 sulA::kanR  constructed and used by E. Maisonneuve, et al. (7)  sulA Δlon  K-12 MG1655 sulA::FRT Δlon  this study; also called AHK173  also called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (7) as EJM47  Δppk-ppx (new)  K-12 MG1655 Δppk ppx::kanR φ80(+)  also called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (7) as EJM47  this study; also known as AHK062  W-12 MG1655 F Δ(araD-araB)567 ΔlacZ4787(::rrnB-3) λ· rph-1 Δ(rhaD-rhaB)568 hsdR514  Δ9CP  BW25113  K-12 MG1655 F Δ(araD-araB)567 ΔlacZ4787(::rrnB-3) λ· rph-1 Δ(rhaD-rhaB)568 hsdR514  Δ9CP  BW25113  Δrac ΔCP4-57 ΔCP5-53 ΔDLP12 ΔQin Δe14 ΔCP4-6 ΔCPZ-55ΔCP4-44 ΔkanR  W3110 galK <sub>tyr145UAG</sub> ΔlacU169 [λ cl857 Δ(cro-bioA)] Δ(srlA-recA)301::Tn10  was db y E. Maisonneuve, et al. (7) as took indication that the lambda prophage; constructed by X. Wang, et al. (9) our laboratory collection; E. coli κ-12 stain carrying the temperature-sensitive λRED prophage;			
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al. (7)  sulA  K-12 MG1655 sulA::kanR  K-12 MG1655 sulA::FRT Δlon  K-12 MG1655 Δppk ppx::kanR φ80(+)  Δppk-ppx (old)  K-12 MG1655 Δppk ppx::kanR φ80(+)  Lagrange (also called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (7) as EJM47  Lagrange (also called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (7) as EJM47  Lagrange (also called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (7) as EJM47  Lagrange (also called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (7) as EJM47  Lagrange (also called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (7) as EJM47  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (9)  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (9)  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (9)  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (9)  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (9)  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)), used by E. Maisonneuve, et al. (9)  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8))  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8))  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8))  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)  Lagrange (black called CF5802 (originally from A. Kuroda, et al. (8)  Lagrange (black called CF5802 (ori	relA spoT (new)	K-12 MG1655 relA::FRT spoT::cat(207)	this study; also called PDC47
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44 ΔkanR prophages; constructed by X. Wang, et al. (9)  HME71 W3110 galK <sub>tyr145UAG</sub> ΔlacU169 [λ cl857 Δ(cro-bioA)] Δ(srlA-recA)301::Tn10 our laboratory collection; E. coli K-12 stain carrying the temperature-sensitive λRED prophage;		,	
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the temperature-sensitive λRED prophage;	UNAE71		
	I IIVIE / I	VV 3110 guinty/145UAG ΔIUCO 103 [Λ ClO3/ Δ(ClO-DIOA)] Δ(SIIA-IECA)301::IN10	
			constructed by J. A. Sawitzke, et al. (10)

MAS889	W3110 galK <sub>tyr145UAG</sub> ΔlacU169 [ $\lambda$ cl857 Δ(cro-bioA)] srl* rec* tet <sup>S</sup>	this study; derivative of HME71 cured for the $\Delta(srlA-recA)$ 301:: $Tn$ 10) insertion
MAS242	K-12 MG1655 $\Delta(proAB-lac)$ cys $Ilv(val^R)$ str <sup>R</sup> thi mini-Tn10 close to $galE$	our laboratory collection
MAS902	W3110 $galK_{tyr145UAG}$ $\Delta lacU169$ [ $\lambda$ cl857 $\Delta (cro-bioA)$ ] $srl^{+}$ $rec^{+}$ $tet^{S}$ $tn10$ close to $galE$	this study; <i>tn10</i> close to <i>galE</i> transduced from MAS242 into MAS889
Bacteriophages		
T4D	wildtype strain	obtained from Kenneth Kreutzer
φ80 <i>vir</i>	obligately lytic mutant of φ80	obtained from Sine Lo Svenningsen
lambda <i>cl<sub>b221</sub></i>	obligately lytic mutant of lambda (cl mutant)	our laboratory collection

<sup>\*</sup> newly discovered genotypic features of previously published strains are highlighted in bold font; the defective lambda

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